

Gaitre

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M.D. Thesis by John Lumsden  
M.B.C.M. of Glasgow University 1888

Gaitre with special reference to its Etymology.

John Lumsden M.B.C.M.

Barry.

Glasgow and S. Hall

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# Goitre

## Places where observed.

### ① Rhondda Valley Glamorganshire

Having been an assistant in a colliery practice in Rhondda Valley this disease attracted my attention and before a residence of three months had passed scores of cases came under my notice not for treatment but were observed by me in my daily rounds. Though this disease usually associates itself with valleys yet its aetiology seems as obscure as Sir Graeme put it down to Sunless valleys as occurring in Switzerland others find in the water supply a sufficient cause to satisfy their requirements whilst some even have suggested a Bacillus. Regarding the special constituent of the water said to form grounds for enquiry lime with or without magnesia has received most attention and certainly the majority of fountains districts show a water with abnormal quantities of lime. Turning to Parker Hygiene we find the water analysis monograph all the enquiries as to the aetiology of the disease Chatin attributed it to the want of Iodine, Mr. Graeme & Hy. Salt with or without lime and that the water of fountains districts is derived from limestone and dolomitic rocks or from Serpentine in the granitic and metamorphic regions. Others again attribute it to Iron Sulphate, Ferrous Sulphide, Arsenic Sulphide.

or some other metallic Sulphide Saint Laeger believes that goitrous districts coincide with the metalliferous districts. In my mind the water has received too much attention. The medical student has got accustomed to think age even from the times of Hippocrates that the causation of this disease is something in the water. He goes to a goitrous district gets the water analysed, and at once in the truly orthodox fashion finds some abnormal constituent and immediately puts that constituent as the cause.

Returning to Rhondda valley. It is situated in Glamorganshire S. Wales running in general a southerly direction is about 20 miles in length from Pontypridd to Treherbert. The hills on each side are about 500ft high and are in general barren yielding little subsoil though here and there verdant acclivities are met with on which flocks of sheep are pastured. In many places the sides of the hills are covered with woods presenting with the deep glen a scene of most romantic beauty. To the South of the Valley towards Cardiff is a level tract of country which is extremely fertile the soil like that of the Vale of Glamorgan consists principally of clay and produces very fine crops of wheat. Generally speaking the Rhondda Valley passes through the South Wales coal measure. The millstone grit crops out occasionally and in places the surface is composed of Striant sandstones or some alluvial deposits.

Dr Dyke Buxton writing about the geological formation of the watershed.

from Pontypidd to the head of the Rhondda Valley is that of the mineral basin of South Wales. Near Pontypidd there strata of new Red Sandstone which are called Idlestone then the succeeding outcrops of the various strata of coal separated by the new red sandstone rocks. At the head of the Valley strata of Roubstone crop out also separated by sandstone rock. There is no limestone in the valley. There is as yet no drainage system though the Pontypidd and Ystradgynnydd Local Boards are carrying out together schemes works in the drainage of the Rhondda Valley. Most of the populated districts in the valley will I believe be able to use the sewers of these works the outfall of which will be into the Bristol Channel about two miles to the East of the Pwllheli River.

The climate is much the same as London being nearly in the same latitude. The rainfall of Cardiff 38.18 but that of the valley itself is much greater following the general rule that air specially hot air charged with vapour impinging upon a chain of hills results in rain and dew it may be stated as bearing indirectly on what follows that this disease in the district in question is frequently associated with heart disease of an organic nature.

Cases observed in this district the first two being vouched for by J. Lewis 174 Aberystwyth Road Cardiff. They reside in Felli Rhondda - Mother and father. Son Cretin about 20 years of age who could only utter a few Welsh phrases. His actions were automatic

and his senses seemed wholly wanting. The mother herself besides being goitrous had entire forehead and face. There is a want in her. The son is a pure cutie and the woman has some friends relationship not precisely ascertained also goitrous. They have been in the Valley all their days.

Case 11. Mother goitre son about 18 months pure cutie (specially noted as not being rickets). They have never been from the Valley. These two cases reside in Gelli Chondda within a mile of each other.

Mrs Jones 10 Hillside Terrace has had goitre since about 15 years of age widow with 5 or 6 of a family one daughter unmarried about 18 years of age been in service some time in Gloucestershire with a country gentleman came home from service suffering from Anæmia palpitation dyspnoea and slight enlargement of the thyroid gland. This case is interesting as showing goitre beginning in a young woman coming of a goitrous stock and removed from the local conditions. Mrs Jones was my landlady and she was either a near or distant relation to everybody round about. Her goitre never troubled her except in damp weather when she suffered from a choking sensation. Excepting the enlarged thyroid there was no other symptom.

Mrs Jones, Hillside Terrace could only speak Welsh with small family a countenance betraying blunt stupidity both one of her children there was a want. read abnormally

large and at age of five had scarcely learned even a little Welsh. This child was subject to fits.

Mrs. residing in 8 Thomas Street Pentre with tremendous foetus which had been tapped several times at Cardiff with no good effect unless temporary diminution in size.

Mrs. 16 Albert Street large foetus which had inflamed and seemed at least according to Dr Thomas to have taken on malignant action. She was a blood relation of Mrs. Jones 10 Hillside Terrace and was the third wife of her husband who I am led to believe is marrying again. The dead and death certificate was signed Barcelona by Dr W.S. Thomas & trady.

## 2. Islay.

Islay is separated from Jura by a channel of two miles or so and in Islay there are two ridges of mountains on the right and left on the right the soil is composed of a double carbonate of lime and magnesia whilst on the left it is of a platy formation. At the bottom of the hills is Loch Finglary from which are mills of bog and in the immediate vicinity is this platy formation of stone. The grass growing over this is luxuriant hence chosen by practical grazers. The two cases occurred about 15 miles from Bormora in Crofters.

Names of cases Camuchail a crofter son of John and Mr. large forehead small face bones His grandmother by her mother's side had foetus and her brother is a minister.



in America and went from same place. He also suffered. There is a case of Strabismus.

The water in this district is derived from a bed of clay slate and very pure only traces of  $Mg$  and  $CaCO_3$  being found.

### Mullof Galloway.

Two Cases one by Dr J C Bowie and the other by Dr St B. McLeod, who in his observations remarked that the water in this district is exceptionally hard. The people here are non migratory.

J. Combe Williams passenger on board SS Ionic from New Zealand October 1886, age about 21. Suffered in same cabin discovered his accident that he was addicted to Masturbation. Faced him with it and he acknowledged it. His follicle had commenced when about sixteen years of age, and at this time 5 years afterwards had grown to considerable size. It was a typical case of trophic follicle. He had one of those arched palates a feature common to Cretins at least so it is stated though this is the only case that I could satisfy myself of the peculiar conformation of the palatal arch. He was a beautiful singer, but otherwise his tastes were depraved. This case is interesting as showing exophthalmic follicle beginning in a man and associated with masturbation. He resides in London but has travelled a great deal. There was nothing in local conditions influencing its production.

Ballakulisch in the North of Ayrshire, famous for Slate, Case of a

typical Highlanders son goitrous, mother had most peculiar face large forehead and small cheek bones ears directed forwards. The district is mountainous and the water is derived from a slaty bed. I daunt had the water of this district analysed and will content myself in stating what is generally admitted, that finally speaking the water derived from a slaty bed is pure containing as a rule not more than 4 to 5 parts of solids per 100,000. This case is vouched for by Dr J. B. Boice who remarks that he nor his people had never been 20 miles from home. A few other places in which goitre occurs may be mentioned. In the valleys of Switzerland districts in Cude in NW. India Bhagsoo Durmsala where Dr Wilson made extensive inquiries and found the water exceptionally pure, only there giving any trace of lime or mag.

Case sent by Dr A. H. Chalmer M.D. It was a lad who for two years was plagued with goitre at the period of adolescence and the water certainly had nothing to do with it. The water is the Bothwell water which all the inhabitants use which is a very pure water. It seemed to come with the nervous disturbances of nascent puberty and although he was taking KI and using Lugd Iodine when it disappeared. Dr. C. could not convince himself that they had anything to do with its disappearance.

Water Supply of the Rhondda Valley. This is under Commissioners

who have had a large reservoir constructed at Treherbert and Dr. Dyke Muthy who has examined several samples says. The waters are always soft and pure when taken at the well spring but more or less impure, as the distance from the source was greater. Three degrees of hardness is the usual average. In order to discover the impurities if any existed I sent samples to Dr. Chalmers Mossend, which samples were taken at distances of 8 and 4 miles viz. Olympia and Pentis. This is what he says the water is exceptionally pure. There is neither Sulphates Chlorides nor lime salts the first and last being specially the salts giving rise to hardness in water. The reagents used were Fannin Chloride Argent Nitras and Oxalate of Ammonia for the salts in the order mentioned. There are no sulphides nor Magnesian Salts. These facts exhaust all the constituents which have been said to produce the disease. Conversely here in Barry the water is exceptionally hard, contains both lime and Mg. is sedimentous and is derived from limestone rocks yet there is no case of scurvy in the district Barry is a seaport town.

Symptomatology of Disease as actually observed, in two Cases the former one in No 157 High St Treherbert and the other being the daughter of Mrs Jones 10 Hillside Terrace already alluded to &c. It invariably begins in the female sex and in the Rhonda Valley shows its early symptoms about 13. or 14 Years of age prior to the appearance of the Catamenia and is marked

in with various nervous disturbances

Protuberance of eyeballs due to deposition of fat and increased vascularity behind the eyeball

Anaemia the blood in our case showed less than 2,000,000 RBC per Cmm. when examined per haemocytometer. It may be here remarked that in the old established cases in this district the anaemia wholly, whilst the xophthalmos partially, disappears one could easily classify the cases thus

Those beginning Xophthalmic form

Those Established Bronchocele.

One group of symptoms is present in every case whether of long standing or not and that is a group of nervous symptoms not a part of the anaemia as they are present after the anaemia has disappeared. The disease seems to begin suddenly with great nervous excitability just at the time when nervous calls are being made on development. Hysteria is common. Outbursts of passion, excited action of the heart etc with tremors and pulsations of vessels at the root of the neck.

A curious incident as bearing on this Hysteria may be here recorded. Having been called to attend a child of Mrs Jones, Thelshide, Tenace Centre I saw at once the appearance of the xophthalmic form on Mrs Jones and proceeded at once to take note of a few observations. The following day I followed up my inquiries and that same night was called out to attend her in a

fit of Hysteria. My examination and enquiries had evidently upset her, and though I attempted to persuade her that there was nothing wrong. I was turned out as an unfeeling wretch. The facts related up to that point were that it had begun when she was about 15 and had gradually increased in size till the time of my appearance. She was a woman of low intellect and could speak but little English in fact few of those suffering from Jotie could speak anything but Welsh. There was marked Anaemia but no protuberance of eyeball. The tumour was about twice the size of an egg soft and sensitive but not painful. The woman is best described by saying she was stupidly dull. She is about 30 years of age & never been out of the valley and has a small family.

Regarding the Classification of Jotie into Bronchocele and Exophthalmic Jotie this could be done with the cases in the district by classifying the Joties of the young as Exophthalmic and that of the aged as Bronchocele. It seems consistent to state that there is a conversion of the one into the other by the reabsorption of the fat elements and a diminution of the vascular excitement and this accords with the course of the symptoms the venous hum and V.S. murmur so often noted are seldom met with in established cases. Organic heart disease is frequently met with but this is very probably a coincidence as

Rheumatism is a very frequent disease. No doubt there seems to be some difference from the facts of Switzerland, which partakes more of a cystic structure, assumes larger dimensions whilst that of the Rhondda Valley partakes more of an abnormal development of the vascular elements and doesn't attain to any great size.

The inhabitants generally speaking are Welsh there being only a few English. They have for the most part been residents there all their life and seem to lead a chained life amongst their native hills. Contentment with their lot prevents that migration so characteristic of other nations. They are small in stature with heavy foreheads and small face bones. They vegetate rather than live and are so unaccustomed to strangers that they resent their presence and it is only within the past few years that an Englishman has dared show his face amongst them. The inhabitants are very uncleanly & it is quite a common thing to have two three or more families in one house. The morality of the district is disgusting and speaking generally the inhabitants are of a low type. They marry early and usually "do convenience". Syphilis is common.

### General observations on the disease in Rhondda Valley

Gout is in the Rhondda Valley, is only seen amongst the poorer classes of miners seldom amongst the well-to-do.

There are many well to do people, tradesmen, artisans, shopkeepers who have been subjected to the conditions of life since birth and the disease never shows itself. Traupis, appearing there never suffer. The disease only shows itself amongst those who have been resident there all their lives, and whose parents have lived there always before them. In the tall well knit, bony forms of some of the inhabitants for there are such the disease never shows itself. It only occurs in those showing physical degeneration with co-existing mental deficiency. The children in their earlier childhood might easily be mistaken for rickets, children when the bodily development seems checked. The head large bones widely separated small face bones swollen belly and shrunken limbs. Teething goes on slowly and irregularly and hydrocephalus is common. From the facts already given our conclusion seems feasible & that is that foete prevails in confined communities and is associated directly with degenerative changes. To stamp the disease as a neurosis is nothing new and that it is the sympathetic system which shows derangement is borne out by the Symptomatology viz increased vascularity of the thyroid excited action of the heart palpitation and hysterical symptoms all point to a degenerated nervous organization.

What then is at the root of this degeneration. Is it

some special constituent in the water? Everything that has been written in the aetiology of goitre especially by those seeking to find in water the causation of the disease has been apparently proved and disproved. Goitre is prevalent in districts where the water contains lime and Mg. and also as instance the R.V. where the water is exceptionally pure. Every abnormal constituent has been put down as a cause simply from the coincidence of that abnormal constituent in a goitrous district whilst the same constituent in other goitrous districts is absent and is present in others where goitre is never seen. As a general rule goitrous districts coincide with a soil composed of a double carbonate of lime and Mg. simply from the fact that in valleys and tracts of land, with circumstances by mountains this is usual geological formations but here in the Rhondda Valley there is no lime whatever either in the water or soil. nor does the geological formation of the watershed suggest any impurities.

Dr Traford Dr St. Tomlinson Cardiff & medical officer of that town says that the water is purer than that of Cardiff the composition of which is as follows;

(See next page)



| Description.      | Solids. | Albumin. | Ammon. | Free Ammon. | N. Nitrate Nit. | Total N. | Sewage. Cl. |
|-------------------|---------|----------|--------|-------------|-----------------|----------|-------------|
| Water from Slys.  | 31.2    | .006     |        |             | .089            | .064     | slight 1.5  |
| Glauishen.        | 22.8    | .0085    | .0026  | .047        | .056            |          | 1.15        |
| Limit of Imp. St. | 40.0    | .015     | .010   | .100        |                 | 700      | 3.0         |
| Std of Purity     | 20.0    | .004     | .002   | .050        |                 | nil      | 1.5         |

|                            | Temporary Hardness. | Permanent Hardness |
|----------------------------|---------------------|--------------------|
| Water from Slys.           | 18.8.               | 30.8.              |
| Glauishen                  | 9.0                 | 9.4.               |
| Limit of Impurity Standard | 5.0                 | 24.0               |
| Standard of Purity         | 14.0                | 3.0.               |

The general statement of Dr Dyke Muthy Tydvil, already alluded to, also indicates a pure water whilst samples sent to Dr A H Chalmerus Mownd, which were examined with special reference to constituents said to give rise to gonitis give negative results. The natural conclusion is that the water has nothing to do with the production of the disease at least in the Rhondda Valley. I have dealt exhaustively with the Rhondda Valley, as I believe if it be possible to fix the causation of this disease it can be found here. To remove any possibility of doubt I have gone into a description of the valley the geological formation of the watershed

and an analysis of the water and safely conclude that there is nothing in these but what can be found else, where in Glamorganshire.

To sum up my convictions are that intemperate relations is at the root of this neurosis and that given a confined and non migratory community, Gout will make its appearance in a certain proportion of the females whilst Cretinism will appear amongst the male portion of that community. In all districts markedly gouty this is a marked feature and in the Rhondda Valley this is borne out by facts because it is only in the lower orders who reck not whom they marry that this disease is so common, whilst in the higher classes speaking comparatively the disease is seldom if ever seen. nay more those who boast of a distinct genealogical tree even though they have been resident there all their lives do not suffer. The manner in which this degeneration incident upon intemperate affects the two sexes can be explained when we consider the development of the sympathetic system in both sexes. We know that in women the sympathetic or organic system of Bichat is more highly strung than in men and the sign of disturbance in this system in women is Hysteria whilst in the lower

tioned organic system of man the sign of disturbance is Hypochondriasis. In what manner then does intermarriage affect the system in both sexes. Intermarriage is a consequence unavoidable in a confined and non migratory community. Inhabitants of a country which has not been opened up have no other course and in a very short period of time intermarriage amongst relations must follow with a necessary degeneration of that community. In women the degeneration manifests itself in many ways but more particularly in the Sympathetic System. Hysteria is common, forie is common. These two diseases are strictly comparable. They are both manifestations of a neurosis and are both frequent in the so called four corners districts. The male sex are affected in a different way. They become Hypochondriacs and Cretins. A Cretin is usually described as a form of idocy and this is true in a typical case but what is the condition of those who are only one stage advanced. Cretinism is no rapid and fast disease but is nothing more nor less than the final stage of a degeneration. Some men so the length of desecubity this stage of

of cretinism thus

Cretins

Semi cretins

Cretinism or Cretins of the third degree.

For cretins there is no hope. they are idiots whilst far too 2 and 3 if taken from their birth place and put under proper hygienic surroundings and judicious superintendence improve greatly in body and mind and may become useful members of society.

Take the male inhabitants of the Rhondda Valley - pure cretins are found whilst the majority show signs of a retrogressive metamorphosis both in mind and body. They are men of small stature large foreheads small cheek bones. Morally they are hypochondriacal and sullen and have no ambition about gratifying sensual passions. Intellectually they are far below par. Are these people distinct from cretins or are they one stage towards that final degeneration. I doubt they are not distinct from cretins but differ from them only in degree. Will the outcome then be a race of cretins. My answer to this is No. Strangers are now appearing on the scene attracted by the mineral wealth of the district. They are forcing their way in new blood is being introduced and cosmopolitanism must soon reign. The result

in my opinion will be the partial regeneration of a degenerated race.

One circumstance favouring my argument is that no matter what the locality and composition of the water we seldom find foetie unless it be imported till the inhabitants have remained for more than one generation. Do we find foetie in Barry a new place? What is the composition of the water. It is as limy as water is felt to be & the only effect it can produce is to bring out pimples. Will we ever have foetie. I don't want to prophesy but it is my conviction that we never will have at least as a disease caused by residing in the place.

Does foetie ever occur in Commercial centres or in Countries newly opened up?

Finally I have instanced foetious districts elsewhere some in valleys some not and the majority of them with a pure water supply, but all agreeing in the one point of being a stationary and non migratory community. It seems feasible to urge the conclusion that foetie & eruptions are closely related these two special manifestations the one in the female the other in the male sex depending upon the difference in

in development of the sympathetic system and that they owe their origin primarily to intermarriage. To what part local conditions such as a special inflection in the water may act as exciting causes it seems difficult to determine considering the diversity of opinion backed up by statistics on both sides which prevails.

It is my conviction that it only remains for me to furnish tables of statistics of the close relationship existing between those suffering from foetus in the Rhonda Valley to prove that both foetus and ectomism are manifestations of a degeneration depending upon intermarriage with relations an unavoidable consequence in a community which is confined and non migratory.